



**University of  
Zurich**<sup>UZH</sup>

**Zurich Open Repository and  
Archive**

University of Zurich  
University Library  
Strickhofstrasse 39  
CH-8057 Zurich  
[www.zora.uzh.ch](http://www.zora.uzh.ch)

---

Year: 2019

---

## **Terra Firme-Forme Dermatitis Diagnostic Sign and Treatment: A Case Report**

Stiube, Antonela ; Jenni, Daniella ; Wiederkehr, Lea ; Anzengruber, Florian ; Nobbe, Stephan

**Abstract:** Terra firma-forme dermatosis (TFFD) is a little-known disease of unknown etiology that clinically presents with asymptomatic brown to black plaques and resembles dirty skin. Here, we report the case of a 38-year-old woman with skin changes on her areolae that were mistakenly diagnosed as “dermatitis neglecta” by several physicians. Cleansing with water and soap had no impact on the skin appearance. But a swab of 70% isopropyl alcohol removed the plaques immediately, which confirmed the diagnosis of TFFD. Only a few cases of TFFD have been published, and this skin condition is not mentioned in many textbooks. Given the unfamiliarity of this disease, TFFD is speculated to be immensely underdiagnosed, even though a simple diagnostic sign exists.

DOI: <https://doi.org/10.1159/000499897>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-173320>

Journal Article

Published Version



The following work is licensed under a Creative Commons: Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Originally published at:

Stiube, Antonela; Jenni, Daniella; Wiederkehr, Lea; Anzengruber, Florian; Nobbe, Stephan (2019). Terra Firme-Forme Dermatitis Diagnostic Sign and Treatment: A Case Report. *Case Reports in Dermatology*, 11(1):108-112.

DOI: <https://doi.org/10.1159/000499897>

## Single Case

# Terra Firme-Forme Dermatositis Diagnostic Sign and Treatment: A Case Report

Antonela Stiube   Daniella Jenni   Lea Wiederkehr   Florian Anzengruber  
Stephan Nobbe

Department of Dermatology, University Hospital Zurich, Zurich, Switzerland

## Keywords

Terra firma-forme dermatosis · Duncan's dirty disease · Isopropyl alcohol · Abnormal keratinization

## Abstract

Terra firma-forme dermatosis (TFFD) is a little-known disease of unknown etiology that clinically presents with asymptomatic brown to black plaques and resembles dirty skin. Here, we report the case of a 38-year-old woman with skin changes on her areolae that were mistakenly diagnosed as "dermatitis neglecta" by several physicians. Cleansing with water and soap had no impact on the skin appearance. But a swab of 70% isopropyl alcohol removed the plaques immediately, which confirmed the diagnosis of TFFD. Only a few cases of TFFD have been published, and this skin condition is not mentioned in many textbooks. Given the unfamiliarity of this disease, TFFD is speculated to be immensely underdiagnosed, even though a simple diagnostic sign exists.

© 2019 The Author(s)  
Published by S. Karger AG, Basel

## Introduction

Terra firma-forme dermatosis (TFFD) is a benign condition that presents with asymptomatic brown to black plaques and resembles dirty skin. It is especially observed in the face, neck, and trunk in young patients. The plaques can be localized or generalized. The condition

is only little known and is rarely described in the medical literature or in textbooks. Currently, the etiology remains unknown, but it is hypothesized that TFFD results from delayed maturation of keratinocytes with incomplete development of keratin squames, and retention of keratinocytes and melanin within the epidermis. Histopathologically, melanin retention and alteration of keratinization can be found [1–3]. Dermatoscopic examination of the lesions show polygonal brown scales, arranged in a mosaic pattern [4]. TFFD can mimic acanthosis nigricans, epidermal nevi, dermatosis neglecta, tinea versicolor confluent and reticulated papillomatosis, postinflammatory hyperpigmentation, or seborrheic keratosis.

### Case Report

A 38-year-old woman presented to our clinic with brown skin eruptions on her areolae, which first appeared in puberty. The patient reported that black crusts erupt on the nipples and – even without therapy – over time fall off. As a consequence, mildly painful wounds would arise. Now that she was nursing her baby, the crusts were detaching more rapidly. She feared that the baby's health could be affected, which lead her to the consultation in our clinic.

At presentation, symmetrical, dark-brown, hyperkeratotic plaques on the areolae were noted (Fig. 1). The patient reported no pruritus and no pain associated with it. Due to the presentation, we considered TFFD, dermatosis neglecta, an atypical presentation of acanthosis nigricans, or dermatosis papulosa nigra.

Rubbing of the skin eruptions with a gauze immersed in 70% isopropyl alcohol cleared the skin immediately and almost completely (Fig. 2), which confirmed the diagnosis of TFFD. Further care with Vaseline was recommended, and the patient was advised to repeat the treatment with isopropyl alcohol in case of recurrence of the skin changes.

### Discussion

TFFD was first reported by Duncan et al. [2] in 1987 and received the nickname “Duncan's dirty disease.” The term terra firma-forme derives from Latin and can be translated as a surface that is similar to the solid land. The skin changes appear as brown-blackish plaques and can affect several locations of the body. Aslan et al. [5] recently published a retrospective analysis with 79 patients. The highest prevalence was found among children (88.6%), with an average age of onset of  $10.4 \pm 7.5$  years. Commonly, the skin on the trunk and neck was involved, about a quarter of all patients showed involvement of the extremities and, in less than 3%, the head. The majority of all patients had only one lesion; however, in about 30% several lesions were found.

The exact etiology of TFFD is still not clear [6]. The pathomechanism is thought to be attributed to abnormal keratinization. An association with atopic dermatitis and xeroderma has been reported [3]. Even though TFFD was reported in association with pregnancy [7], it can be assumed that there is no etiological association, but simply a higher rate of detection during this phase of life. The possibility for a syndromic disease has been postulated, which will remain disputed though until further evidence arises [8, 9].

The disease is commonly considered as benign [3, 10], but cosmetic distress in affected patients can occur. Differential diagnosis encompasses dermatosis neglecta and acanthosis nigricans [10]. Both can mimic TFFD, but only dermatosis neglecta is routinely removed while bathing [10, 11]. An association between acanthosis nigricans and insulin resistance, obesity

has been reported [12]. Acanthosis nigricans cannot be removed by alcohol swab, water, or soap [10], but it requires keratolytics and skin-lightening agents [12]. Tinea versicolor, also known as pityriasis versicolor, is caused by *Malassezia furfur*. The Wood lamp helps demonstrate its yellow-green fluorescence, in contrast to TFFD, which shows no change [13]. Although appearing in similar anatomical regions, TFFD differs from the tinea versicolor through symptomatology. TFFD is asymptomatic, whereas tinea shows mild itching and scaling. TFFD can also mimic postinflammatory hyperpigmentation. With the help of a Wood lamp, this can be distinguished by TFFD, due to the enhanced epidermal pigmentation [13]. Other differential diagnoses include confluent and reticulated papillomatosis, seborrheic keratosis, and epidermal nevi. Even if they resemble TFFD, they cannot be removed by using rubbing alcohol. TFFD can be diagnosed using dermoscopy (Fig. 3) [4].

Typically, TFFD is treated and completely cleared instantly after rubbing with 70% isopropyl alcohol immersed gauze. This rapid clearance with isopropyl alcohol, which is not seen with water and soap, can be interpreted as a diagnostic sign [14]. As a treatment, salicylic acid peeling with alcohol base was also successfully used. By applying a swab of alcohol, there is the possibility of irritating the skin. Therefore, the combination of chemical peeling and alcohol base should be considered for a very good cosmetic result [11]. The role of re-moisturization as a preventive measure remains disputed [5].

## Conclusion

TFFD should be known among dermatologists and can be easily diagnosed and treated with isopropyl alcohol.

## Statement of Ethics

The patient has given his informed consent for the publication of this case.

## Disclosure Statement

The authors have no conflict of interest.

## Funding Sources

No funding was obtained.

## Author Contributions

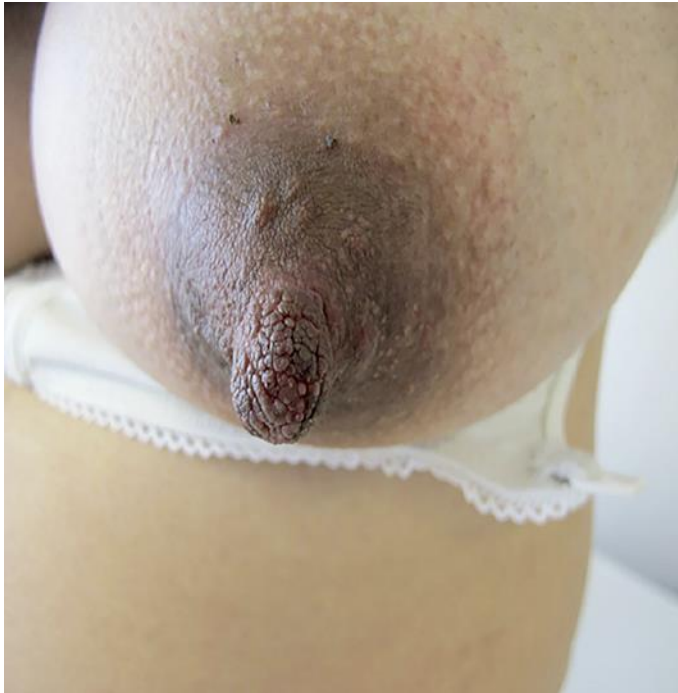
All authors have made substantial contributions to all of the following: (1) the conception and design of the review, analysis, and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

## References

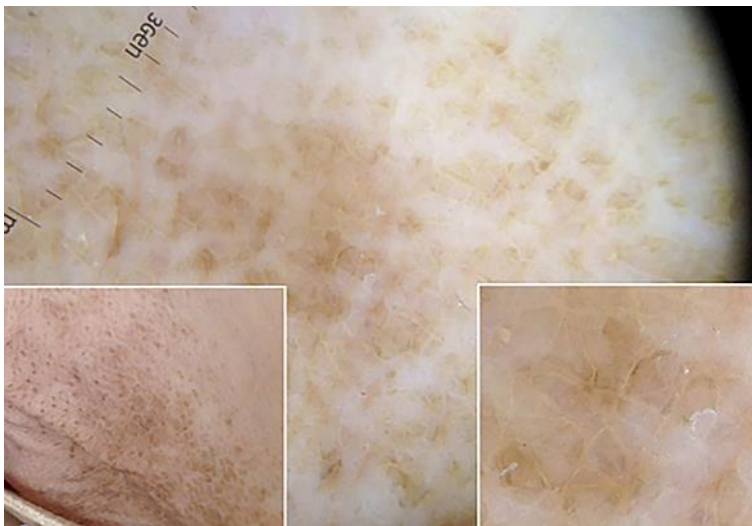
- 1 Browning J, Rosen T. Terra firma-forme dermatosis revisited. *Dermatol Online J*. 2005 Aug;11(2):15.
- 2 Duncan WC, Tschen JA, Knox JM. Terra firma-forme dermatosis. *Arch Dermatol*. 1987 May;123(5):567–9.
- 3 Erkek E, Sahin S, Çetin ED, Sezer E. Terra firma-forme dermatosis. *Indian J Dermatol Venereol Leprol*. 2012 May-Jun;78(3):358–60.
- 4 Errichetti E, Stinco G. Dermoscopy in terra firma-forme dermatosis and dermatosis neglecta. *Int J Dermatol*. 2017 Dec;56(12):1481–3.
- 5 Aslan NC, Güler Ş, Demirci K, Isiyel E. Features of Terra Firma-Forme Dermatitis. *Ann Fam Med*. 2018 Jan;16(1):52–4.
- 6 Filipa Oliveira Baptista J, Morais P. Terra Firma-Forme Dermatitis. *Isr Med Assoc J*. 2017 Sep;19(9):583.
- 7 Demirci GT, Mansur AT, Demiralay E. Terra Firma-Forme Dermatitis Misdiagnosed as Nevroid Acanthosis Nigricans. *Am J Dermatopathol*. 2017 Oct;39(10):782–4.
- 8 Unal E, Guarneri C, Chokoeva AA, Wollina U, Tchernev G. Terra firma-forme dermatosis. *Wien Med Wochenschr*. 2017 Mar;167(3-4):66–9.
- 9 Unal E, Lotti J, Fioranelli M, Rocchia MG, Lotti T, Guarneri C, et al. Duncan's dermatosis: from the "terra firma-forme" to a possible syndromic condition. The story of a dirty disease. *J Biol Regul Homeost Agents*. 2017 Apr-Jun;31(2 Suppl. 2):39–44.
- 10 Leung AK, Barankin B, Lam JM. Terra Firma-Forme Dermatitis. *J Pediatr*. 2018 Apr;195:302–302.e1.
- 11 Chun SW, Lee SY, Kim JB, Choi HM, Ro BI, Cho HK. A Case of Terra Firma-Forme Dermatitis Treated with Salicylic Acid Alcohol Peeling. *Ann Dermatol*. 2017 Feb;29(1):83–5.
- 12 Vashi NA, Kundu RV. Facial hyperpigmentation: causes and treatment. *Br J Dermatol*. 2013 Oct;169 Suppl 3:41–56.
- 13 Ricciardo B, Kumarasinghe P. A Clinical Classification of Pigmentary Disorders. In: Kumarasinghe P, editor. *Pigmentary Skin Disorders. Updates in Clinical Dermatology*. Cham: Springer; 2018.
- 14 Akkash L, Badran D, Al-Omari AQ. Terra Firma forme dermatosis. Case series and review of the literature. *J Dtsch Dermatol Ges*. 2009 Feb;7(2):102–7.



**Fig. 1.** Areolae of a 38-year old woman with hyperkeratotic, dark brown plaques.



**Fig. 2.** No pathological effloresces after treatment with 70% isopropyl alcohol.



**Fig. 3.** Dermoscopic image of a patient with TFFD shows polygonal brown scales arranged in a mosaic pattern. Reproduced with kind permission from Enzo Errichetti, MD, Udine.